What is claimed is:

1. A method of determining the effect of precipitation on flow within a sewer network, comprising:

collecting data representative of a measured rain quantity over a first time interval at a first location, wherein the first time interval has a duration that is less than a twenty-four-hour period;

maintaining, in a memory, data representative of a modeled rain response at a second location over a second time interval, the second time interval having a duration that is longer than the duration of the first time interval;

calculating, in real time, a scaled rain response, the scaled rain response comprising a function of the modeled rain response and the measured rain quantity; and

reporting, in real time, the scaled rain response.

2. The method of claim 1 wherein the second location is a location within a sewer network, and the calculating requires no additional data relating to either the sewer network or any substance flowing within the sewer network.

3. The method of claim 1 wherein each modeled rain response comprises an anticipated increase in flow at the second location over the second time interval.

4. The method of claim 1 wherein the modeled rain response is capable of graphical representation as a curve on a graph where a y-axis represents at least one of inflow and infiltration and an x-axis represents time.

5. The method of claim 1 wherein the duration of the first time interval is shorter than a duration of a corresponding precipitation event.

6. The method of claim 1 comprising the additional step of identifying a cumulative scaled rain response, the cumulative scaled rain response comprising a sum of a plurality of scaled rain responses over a plurality of time intervals.

7. The method of claim 1 comprising the additional steps of

measuring, using a flow meter at the second location, data representative of a measured flow;

subtracting a baseline flow from the measured flow to result in an adjusted flow; and

comparing, using a processor, the adjusted flow to the scaled rain response to determine whether the adjusted flow substantially corresponds to the scaled rain response.

8. The method of claim 7 wherein the comparing step determines that the

adjusted flow and the scaled rain response do not substantially correspond, and comprising the additional step of reporting an alert.

9. The method of claim 7 wherein the baseline flow comprises a flow corresponding to a non-precipitation event.

10. The method of claim 7 wherein the comparing step comprises a goodness of fit test.

11. A method of predicting the effect of precipitation on flow within a sewer network, comprising:

collecting data representative of a first measured rain quantity over a first time interval at a first location;

creating, using a processor, a plurality of possible rain responses, each possible rain response comprising a distribution of possible flow volumes at a second location over a second time interval, the second time interval being longer than the first time interval;

measuring, using a flow monitor, a measured flow volume distribution at the second location over the second time interval;

comparing, using the processor, the plurality of possible rain responses to the measured flow volume distribution;

selecting, using the processor, a modeled rain response, the modeled rain response being the possible rain response that most closely corresponds to the measured flow volume distribution; and

storing the modeled rain response, the first measured rain quantity, and the first time interval in a memory.

12. The method of claim 11 further comprising

collecting data representative of a second measured rain quantity over a third time interval at the first location;

calculating, in real time by a processor, a scaled rain response, the scaled rain response comprising a function of the modeled rain response and the second measured rain quantity; and

reporting, in real time, the scaled rain response.

13. The method of claim 12 wherein the second location is a location within a sewer network, and the calculating requires no additional data relating to either the sewer network or any substance flowing within the sewer network.

14. The method of claim 11 wherein the selecting step comprises performing a goodness of fit test on the measured flow volume distribution and the plurality of possible rain responses.

15. The method of claim 11 wherein the modeled rain response is capable of graphical representation as a curve on a graph where a y-axis represents at least one of inflow and infiltration and an x-axis represents time.

16. The method of claim 11 wherein the first time interval has a duration that is shorter than a duration of a corresponding precipitation event.

17. The method of claim 12 comprising the additional steps of:

measuring, using a flow meter at the second location, data representative of a measured flow;

subtracting a baseline flow from the measured flow to result in an adjusted flow, the baseline flow corresponding to a non-precipitation event; and

comparing, using a processor, the adjusted flow to the scaled rain response to determine whether the adjusted flow substantially corresponds to the scaled rain response.

18. The method of claim 17 wherein the comparing step determines that the adjusted flow and the selected rain response do not substantially correspond, and comprising the additional step of reporting an alert.

19. A sewer network flow analysis system, comprising:

a processor;

a memory in communication with the processor; and

a rain gauge in communication with the processor; and

wherein the processor is programmed to accept, from the rain gauge, data representative of a measured rain quantity over a first time interval that is less than a twenty-four-hour period;

wherein the memory maintains data representative of a modeled rain response at a location in a sewer network over a second time interval, the second time interval having a duration that is longer than the duration of the first time interval;

wherein the processor is further programmed to calculate, in real time, a scaled rain response comprising a function of the modeled rain response and the measured rain quantity; and

wherein the processor is further programmed to report, in real time, the scaled rain response.